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ABSTRACT

This study examined the effects of specific motivational dimensions and self-perceptions of a group of 47 urban black fourth and fifth grade students on attendance and academic achievement. Each student's responses to a measure of intrinsic and extrinsic motivation and a self-perception inventory were compared to each other and to his or her attendance record and scores on the vocabulary, reading, and mathematics subtests of the Iowa Tests of Basic Skills (ITBS). The following conclusions are discussed: (1) many students displayed a lack of intrinsic motivation, relying on teacher leadership in the classroom; (2) general feelings of self-worth were related to perceptions of their physical appearance and athletic ability and not to perceptions of their behavior or their scholastic competence; (3) those students who preferred challenge had more positive perceptions their scholastic ability but more negative perceptions concerning of their social acceptance; and (4) attendance and academic achievement were not correlated, but those students who had better perceptions of their scholastic competence had better attendance, whereas students who were more independent in their judgments were more likely to have poorer attendance. The findings suggest that schools could enhance the self-image of black elementary school students by using challenging obtainable goals and objectives, encouraging self-directed learning, encouraging self-evaluation, and by becoming more knowledgeable about black culture. Statistical data are included on 16 tables, four diagrams, and one graph. A list of 26 references is appended. (FMW)

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# Intrinsic Motivation, Self-Perception, and Their Effects on Black Urban Elementary Students

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## Abstract

This study investigated the effects of specific motivational dimensions and self-perceptions of urban fourth and fifth grade students (N=47). In particular, differences and relationships among components of intrinsic motivation and domains of self-perception were explored. The relationship of these components to each other and to the variables of attendance and achievement were analyzed. The results presented a profile of the sample that reflected a lack of social acceptance for vocabulary skills and for preference for challenging work. Perception of scholastic competence was related to behavioral conduct but not related to global self-worth. A number of comparisons are represented in the 13 tables and 4 figures presented in the paper.

# Intrinsic Motivation, Self-Perception, and Their Effects on Black Urban Elementary Students

Educators assume that motivation and self-concept make a difference (Maehr, 1978). In particular, it is assumed that students that are more intrinsically motivated should be better students. Intrinsic motivation has to do with an internal drive to succeed at a task exclusive of external rewards. Students that want to accomplish a task for themselves are likely to be more interested and put forth more effort than those students that are performing a task for some external reward such as a grade. It might also be generally assumed that students with better self-concepts do better in school. Students that perceive that their lives are satisfying and that they have a measure of competence might also have an edge in the classroom. It might also be assumed that the variables of motivation and self-concept are similarly effective across grade levels and ethnic groups.

The purpose of this study was to explore the dimensions of intrinsic motivation and the perceptions of "self" held by Black urban elementary students. By analyzing these structures and the interactions of theses structures with each other and with school attendance and achievement it was hoped that relationships will emerge that offer some insights into the nature of these students. It was further hoped that these relationships will hold implications for the improvement of education of Black urban

elementary students.

Differentiation of intrinsic motivation and self-concept dimensions has lead to further understandings of specific aspects contributing to student behavior and achievement. Harter (1981b) identified five components of intrinsic motivation for a self report classroom scale: (1) preference for *Challenge*, (2) *Curiosity*/interest, (3) independent *Mastery*, (4) independent *Judgment*, and (5) internal *Criteria*. The last two have been defined as more cognitive in nature than the other three. Although Gottfried (1985) found a relationship between these components and measures of subject matter motivation, the relationship of these components within the urban student population has received little attention.

Harter (1985b) identified five specific domains of self-perception along with a more global view of self-worth for a Self-Perception Profile for Children: (1) *Scholastic* competence, (2) *Social* acceptance, (3) *Athletic* competence, (4) *Physical* appearance, and (5) *Behavioral* conduct. Of these domains the relationship of academic self-concept and more global measures of self-concept have been explored. Using suburban high school students Byrne and Shavelson (1986) found a strong correlation between general self-concept and academic self-concept.

Studies have indicated some similarities and differences in motivation and self-concept across various backgrounds. Jensen, White, and Galliher (1982) found that Blacks did not suffer from

extremely poor self-concepts. Martinez and Dukes (1987) found that minorities tend to have lower levels of self-esteem than whites on public (intelligence) aspects of self-esteem, but higher levels for private satisfaction with self. Although urban and rural 11th graders did have different occupational and educational aspirations, they did not differ in achievement motivation or locus of control (Zimbelman, 1987).

Studies on minority students have yielded mixed results concerning relationships between components of intrinsic motivation and self-perceptions, and achievement. When intrinsic motivation, perception of academic competence, and achievement were specified by subject area, relationships have been established (Byrne, & Shavelson, 1986; Gottfried, 1985). However, when the context become less well defined studies have yielded conflicting results. With racial mixed kindergarten children Trent (1986) found a significant correlation between self-concept and academic achievement. An Australian study on 7th through 12th grade students failed to find a sufficient correlation between general self-concept and academic achievement, but did establish a relationship between academic self-concept and academic achievement (Marsh, Parker, & Barnes, 1985). Mboya (1986) found no relationship between global self-concept and academic achievement (based on a standardized achievement test) in tenth grade Black students. It was concluded from the study that although there is a relationship between academic achievement and self concept of academic

ability, academic achievement has little influence on the more global self-concept of Blacks. Using grade point averages, Jordan (1981) also found that for Black adolescents global self-concept was not related to academic achievement, whereas academic self-concept was related to academic achievement.

The basis for self-concept and self-evaluations of competence appears to be specific to proximal reference points. Brookover (1987) states that self-concept of academic ability is contingent upon comparisons to relevant others within the school. Therefore, individuals in more homogeneous lower achieving groups assess themselves relatively higher than they would in more heterogeneous achievement groups. The importance of the reference group for perceptions of self was supported by a study which found that retarded students compared themselves with other retarded students when evaluating their own perceived competence (Silon & Harter, 1985). A study comparing observable behaviors and self-concept in kindergarten students found no relationships and concluded that low rated students were unable to make accurate self-appraisals (Strain, et al., 1983). However, the self-assessment of performance by Black elementary students was found to have a greater effect on help seeking behaviors than their actual performance (Nelson-LeGall & Jones, 1989).

Harter (1985a) determined a developmental relationship between achievement and self-perception of scholastic competence. The correlation increased from third to sixth grade from .30 to .60. Those that reported higher scholastic competence were also

higher in their self-reported preference for challenge, lower in anxiety, and evidenced an understanding of factors that controlled their successes. Students that overrated their own abilities did not form these integrated relationship of constructs with the academic domain.

## Method

### Subjects

The subjects for this study were 47 Black students from an urban elementary school in the mid-west. The school served as a professional development school for the local extension of the state university. The students were drawn from two fourth grade and two fifth grade classes. All students in the classes were administered the two self-report measures used in this study. Questionnaires were not scored for students that had not returned permission slips from their parents. Failure to return parent consent forms reduced the sample to 47. Missing achievement scores for a few of the students eliminated them from some analyses.

### Materials

Intrinsic Motivation. A Scale of Intrinsic Versus Extrinsic Orientation in the Classroom (Harter, 1980, 1981b) was administered to the subjects as a whole group in the classes.

The instrument used in this study had been revised by Harter in 1988. The instrument was explained and demonstrated to the students. Each item was read aloud and the students marked their choices. Four students which were absent when the instrument was administered and three students that completed the instrument were administered the questionnaire individually to determine their ability to respond to the statements.

The instrument measures five dimensions of classroom learning which could be described as having intrinsic and extrinsic extremes. The dimensions address five motivational questions: (1) *Challenge*-does the student prefer challenging or easy work? (2) *Curiosity*-does the student work to satisfy interest and curiosity or to satisfy the teacher and obtain grades? (3) *Mastery*-does the student prefer to figure out problems or prefer to rely on the teacher for help and guidance? (4) *Judgement*-does the student feel capable of making judgments about what to do or is the student dependent on the teacher's opinions and judgments? (5) *Criteria*-does the student know when he/she has succeeded or failed on school work or does the student rely on external sources of evaluation from the teacher?

The instrument requires subjects to identify which type of student they are more like by choosing a statement that describes either an intrinsic or extrinsic student. Then the subjects decide whether the statement describes a student that is "sort of" like them or "really" like them.

The instrument has been used on a total of over 3,000 pupils

in grades 3 through 9 from the states of California, Colorado, Connecticut, and New York (Harter, 1980, 1981b). Initial factor analyses on the samples revealed five factors with virtually no items cross-loading on other factors. Higher order factoring identified two relatively independent clusters of subscales. Challenge, curiosity, and mastery emerged as a motivational measure, whereas judgment and criteria seemed to measure more of a cognitive-informational orientation.

Self Perception. The Self-Perception Profile for Children (Harter, 1985b) was administered to the subjects as a whole group in the classes. The instrument was administered approximately two weeks after the intrinsic motivation measure. The format of the instrument was again explained and demonstrated to the students. Each item was read aloud and the students marked their choices. Three students which were absent when the instrument was administered and two students that completed the instrument were administered the questionnaire individually to determine their ability to respond to the statements.

The instrument was originally constructed as the Perceived Competence Scale for Children (Harter, 1982). A number of revisions and conceptual changes were made and the instrument was renamed the Self-Perception Profile for Children (Harter, 1985b). The instrument used in this study measures self-perception in five domains, as well as a measure of global self-worth. The domains include: (1) *Scholastic Competence*-children's perception

of competence or ability related to scholarly performance, (2) *Social Acceptance*-the degree to which children perceives acceptance by peers and feel popular, (3) *Athletic Competence*-children's perceived competence in sports and outdoor games, (4) *Physical Appearance*-the degree to which children are happy with their appearance and feel good-looking, and (5) *Behavioral Conduct*-the degree to which children like the way they behave and act as expected to avoid getting in trouble. The instrument also includes a measure of *Global Self-Worth* which taps the extent to which children like themselves as people and are happy with the way they are leading their lives.

As with the intrinsic motivation instrument, the self-perception instrument requires subjects to identify which student they are more like by choosing a statement that describes either a positive/competent or less positive/competent description. Then the subjects decide whether the statement describes a student that is "sort of" like them or "really" like them.

The instrument has been used on a total of over 1500 pupils in grades 3 through 8 (Harter, 1985b). Gender differences were found on the athletic, behavioral, physical, and global self-worth subscales. Factor analyses on the five domain subscales for the samples revealed five distinct factors with no cross-loadings greater than .18. However, different four factor patterns emerged from two different subgroups of third and fourth graders.

Attendance. Due to a number of students not being enrolled for the whole school year, attendance was recorded as percent of days attended. The students' current (fourth/fifth grade) attendance and that from second grade was recorded.

Achievement. Three subtests of vocabulary, reading, and math from the Iowa Tests of Basic Skills were used. The vocabulary test measures how well students understand the meaning of words. The reading comprehension test measures how well students understand what was read. The math score represents a composite of skills concerning mathematic concepts, solving of word problems, and computational skills. Percentile scores of the students' current (fourth/fifth grade) achievement (Form 7, Level 8) and those from second grade were recorded.

## Procedures

Comparisons were made in order to determine if there was a significant difference on any of the subscales between this study's sample and other samples. T-tests on the intrinsic motivation subscales were conducted on the study sample data and data from a previous study conducted in California (Harter, 1980). The mean values reported for the California sample were highly replicable across five other samples (Harter, 1981b). T-tests on the self-perception subscales were conducted on the study sample data and data from a previous studies conducted in (Harter, 1985b). The previous studies drew their samples from

lower-middle to upper-middle class neighborhoods in Colorado. Approximately 90 percent of the subjects from these studies were Caucasian.

Correlation matrices were produced to determine the relationship among the subscales. Matrices of probabilities were generated for the correlations. Bonferroni adjusted probabilities were used to provide protection for multiple tests (Wilkinson, 1989).

Factor analyses were conducted on the items and the subscales to determine if the factor structures were replicated for the study sample. A varimax orthogonal rotation was performed on the sample data to determine factor loadings. Kaiser-factor matching was not performed because the factor structure presented from the previous studies used an oblique rotation (Harter, 1981b, 1985b). Further comparative analyses should include Kaiser matching or a similar procedure.

Hierarchical cluster analyses using Euclidean distances were performed on the subscales to determine the natural groupings of the subscales. The cluster analyses used Ward's (1963) linkage method for computing distances. The cluster trees were interpreted in light of the results of the factor analyses and correlation matrices for the study sample.

A correlation matrix and matrix of Bonferroni adjusted probabilities were generated for all of the subscales from both instruments. Stepwise regression procedures were used along with the correlation and probabilities matrices to direct variable

selection for regression procedures. Due to the nature of stepwise regression procedures caution should be taken in replication of variable selection. A factor analysis was conducted on all of the subscales using a varimax rotation to determine factor loadings. A hierarchical cluster analyses was also performed on all of the subscales to determine their relationship with one another.

Repeated measures analyses were performed on the students' second and fourth/fifth grade attendance and achievement scores. A correlation matrix and a matrix of Bonferroni adjusted probabilities were generated for all of the achievement scores and the subscales of the instruments. For each fourth/fifth grade subject area achievement score, the subscale scores from each of the instruments were entered into a regression equation as predictor variables along with second grade achievement scores.

## Results

The individual administrations of the instruments did not indicate any problems in understanding of the directions or the concepts. Results are presented for the individual instruments, attendance, and achievement and the interaction of these measures.

Intrinsic Motivation

The t-tests comparing Intrinsic Versus Extrinsic subscale means from this study and a previous study (Harter, 1981b) found two differences (see Table 1). The fourth grade study sample was significantly higher on the *Judgment* subscale ($p < .01$) and the fifth grade study sample was significantly lower on the *Criteria* subscale ($p < .05$). These are the two subscales described by Harter as being more cognitive and informational in orientation.

The results from the factor analysis failed to yield the definitive factors originally described by Harter (1981b). Instead of five strong factor structures with little cross-loading, one relatively strong factor emerged made up primarily of *Challenge* and *Mastery* items, along with four weaker factors, and a number of items had cross-loadings. One factor had loadings of .52 or better for 12 of the 30 items and accounted for over twice as much of the variance as any of the other factors (see Table 2). *Judgement* and *Criteria* items loaded on the second factor with *Criteria* items loading predominantly on the third factor. The last two factors contained a mixture of items. A forced two factor analysis found *Challenge*, *Curiosity*, and *Mastery* loading on one factor and *Judgment* and *Criteria* loading on the second.

The three analyses of the subscale relationships yielded relatively consistent results. *Challenge*, *Curiosity*, and *Mastery* were correlated with each other ($p < .05$, see Table 3). The factor analysis performed on the subscales found *Curiosity* and

*Challenge* loading on the same factor and *Mastery* and *Challenge* loading on another factor (see Table 4). The cluster analysis performed on the subscales further demonstrated the linkage between *Curiosity* and *Challenge* and *Mastery* (see Figure 1). The cluster dendrogram also displays the linkage of the *Judgment* and *Criteria* subscales.

Self Perception

Although subscale t-tests on the study sample and the Harter (1985b) samples found a significant difference between fourth grade females on the *Behavioral Conduct* subscale (see Table 5), a multiple analysis of variance performed on the sample by gender found no significant difference for any of the self-perception subscales (Wilks' lambda=0.76, df=6/40, F=2.06). The t-test results for the fifth graders should be interpreted with caution due to the small cell size created by nesting gender under grade level.

As with the Intrinsic Versus Extrinsic instrument, the items did not load neatly on the factors based on the established subscales for the Self-Perception Profile. The factor analysis, which included the *Global Self-Worth* measure, contained a large number of cross-loading items (see Table 6). A general pattern found *Global*, *Physical*, and *Athletic* items loading together and *Scholastic* and *Behavioral* items loading together. This loading pattern was supported by a forced two factor analysis.

Four analyses of the subscale relationships yielded

relatively consistent results. The *Scholastic* subscale and *Behavioral Conduct* subscale were correlated ($p < .01$) as were the *Global, Athletic, Physical,* and *Social* subscales ($p < .01$, see Table 7). Following a stepwise regression a multiple regression with *Global Self-Worth* as the criterion variable and the domain subscales as predictor variables ($r = .75$, see Table 8) established the *Athletic* and *Physical* subscale coefficients as significant predictors ($p < .01$). The factor analysis performed on the subscales found *Global* and *Athletic* loading on the first factor (see Table 9). *Athletic* and *Social* loaded on another factor. *Global* and *Physical* loaded on a factor, and *Behavior* and *Scholastic* loaded together on two separate factors. The cluster analysis performed on the subscales further demonstrated the linkage between the subscales. *Scholastic* and *Behavior* were linked first, but were the last to join the other subscale clusters (see Figure 2). *Global Self-Worth* and *Physical* were joined together and *Social* and *Athletic* were joined together before these clusters were joined.

Intrinsic Motivation and Self Perception

Correlations between the subscales of the two instruments demonstrated a relationship between the *Challenge* subscale of the Intrinsic Versus Extrinsic motivation instrument and the *Scholastic* subscale of the Self-Perception Profile ($p < .01$, see Table 10). A relationship was also indicated between the *Curiosity* subscale from the intrinsic motivation instrument and

the *Behavior* subscale of the self-perception instrument ($p < .05$). The correlation matrix and stepwise regression procedures guided variable selections for multiple regression equations. The intrinsic motivation subscales were used as criterion variables (see Table 11). To confirm the relationships the regressions were also calculated using the self-perception subscales as dependent variables. Although all of the regression ANOVAs were significant, none of the equations produced a $R^2$ greater that .38. Preference for *Challenge* was positively related to *Scholastic* self-perception and negatively related to *Social Acceptance*. *Curiosity* was related to *Behavioral Conduct* and *Global Self-Worth*. Desire for *Mastery* was related to *Behavioral Conduct* self-perception. Independent *Judgment* was also related to *Behavioral Conduct* self-perception. Internal *Criteria* was negatively related to *Physical* self-perception.

Six factors were established by the factor analysis of the subscales from both instruments (see Table 12). *Challenge*, *Curiosity*, and *Mastery* from the intrinsic motivation scale loaded on the same factor as *Scholastic* and *Behavioral Conduct* self-perception. *Curiosity* loaded with *Physical*, *Social*, and *Athletic* self-perception and with *Global Self-Worth*.

The hierarchical cluster analysis of the subscales found *Global Self-Worth*, *Physical*, *Social*, and *Athletic* joined on one branch (see Figure 3). The *Scholastic* and *Behavior* subscales from the self-perception instrument joined the *Curiosity*, *Challenge*, and *Mastery* subscales from the intrinsic motivation

instrument. *Criteria* and *Judgment* formed the most distinct branch which was indicated by its being the last to join the other subscale clusters.

Attendance, Achievement, Intrinsic Motivation, and Self Perception

Repeated measures analyses of second and fourth/fifth grade attendance and achievement found significant differences for each measure (see Table 13). The students displayed a significant decrease in achievement from the first and second achievement tests (see Figure 3).

Many of the achievement scores from the second, and fourth and fifth grades were correlated (see Table 14). Fourth and fifth grade attendance was correlated with second grade attendance. A stepwise regression identified the *Judgment* and *Scholastic* subscales as being related to the fourth/fifth grade attendance. They were found to be significantly related when entered into the regression equation ($p < .01$, see Table 15). *Scholastic Competence* was positively related to attendance and *Independent Judgment* was negatively related. Attendance and achievement were not correlated. Based on Bonferroni adjusted probabilities, none of the motivation or self-perception subscales were related to achievement. (See correlation matrices in Table 14).

Multiple regression procedures did yield some significant relationships. The second grade achievement scores were included

in equations with the subscale scores with fourth/fifth grade achievement serving as the criterion variable (see Table 16). A few of the subscales demonstrated a relationship to the subjects present achievement. Vocabulary scores were negatively related to the subjects' perception of *Social Acceptance* by peers. Reading achievement was related to the subjects' intrinsic measure of *Curiosity*. Math achievement was negatively related to the subjects' *Independent Judgement* about what to do and positively related to the subjects perception of their *Behavioral Conduct*.

## Discussion

This study provides some insights into the nature of these Black urban elementary students and identifies some patterns that give cause for concern as well as provide some possible direction for practitioners. However, any causal relationships or group comparisons suggested by this study should be interpreted with caution.

### Intrinsic motivation

It was interesting that the two subscales where the study sample differed from past samples were the two cognitive-informational scales. These results suggested that some of the students desired a say in what should be done in school.

However, other students where more reliant on the teacher for evaluations of success and failure. This reliance on the teacher to establish the criteria for success is not unique to urban Blacks, however it is an area of concern that has been identified by others.

As a way of improving problem solving skills, Sewell, Chandler, & Smith (1983) emphasized the need for teachers to promote self-responsibility. They stated (p. 44):

> Given the pressing concerns of educators over the achievement motivation and performance of minority students, there seems to be a need to encourage and promote self-responsibility associated with internal locus of expectancies, especially for individuals who might perceive themselves as having been victimized by poverty and other deleterious socioeconomic circumstances.

The analyses on the responses from the study sample supported Harter's (1980, 1981b) interpretation of higher order factoring of the instrument. She stated that a two-factor solution best described the subscale pattern, with *Curiosity*, *Challenge*, and *Mastery* defining one factor and *Judgment* and *Criteria* defining the other.

Self-perception

The analyses on the responses from the study sample suggested the same pattern identified by Harter (1985b) from one set of third and fourth graders. Her factor analysis on that one subgroup indicated that *Scholastic Competence* and *Behavioral Conduct* joined to form one factor structure. The school from which this subsample was drawn emphasized the relationship between behavioral conduct within the classroom and scholastic success. She also identified correlational clusters which suggested a relationship between *Scholastic Competence* and *Behavioral Conduct*. Another cluster contained the other domain subscales. Informal observations at the study school suggested that the relationship between behaving and doing well in school was emphasized.

The relationship of the domain subscales to the global measure of self-worth, while not surprising based on Harter's (1985b) findings, was disturbing. For these students general feelings of self-worth and happiness were not related to their perceptions of their behavioral conduct or their scholastic competence. Instead, physical appearance and athletic ability seemed to be more important to the students' sense of general self-worth.

Although it appears that schools can successfully convey the relationship between behavioral conduct and school success, they seem to have problems making these concepts relevant to the students' sense of self-worth and well-being. An early emphasis

with relevant examples of the importance of education might encourage a stronger association better school achievement and self-worth. Urban schools need to find ways to make school learning more relevant to the students and the community.

The relationship between intrinsic motivation and self-perception

The same factor structures discovered by Harter (1981a) were evident in this study. Harter found that specific dimensions of intrinsic motivation were related to certain areas of perceived competence. When comparing the subscales from the two instruments she found that *Challenge, Curiosity,* and *Mastery* were related to what was then described as cognitive competence. Perception of *Social* and *Physical* competence were considered a separate factor. *Judgment* and *Criteria* were considered as another factor. These same clusters were represented in this study.

Further exploration of the relationships among the subscales using regression procedures identified some more specific trends. Those that preferred challenge had more positive perceptions of their scholastic ability, but more negative perceptions concerning their social acceptance. This suggested that pursuing challenging activities may be related to more positive feelings about school learning, however it may not be socially acceptable. This situation challenges teachers to find ways to make academic pursuits socially desireable for these students.

The effects on attendance and achievement

It was interesting that attendance and achievement were not correlated for this sample at this grade level. However, regression procedures did indicate that students who had better perceptions of their scholastic competence had better attendance, whereas students who were more independent in their judgments of what to do were more likely to have worse attendance. It is likely that these constructs would have an increasing impact on attendance as the students became more independent in their actions.

It was rather surprising that there was not a stronger relationship between achievement and the subscale scores. Although the relationship between *Curiosity* and reading achievement makes sense, the other relationships were either non-existent or a bit confusing. Self-perception of social acceptance was negatively related to vocabulary achievement. This suggested that students with better vocabularies perceived themselves as less socially acceptable. If this perception was reflected in social practices then possessing a better vocabulary (as reflected by standardized achievement tests) would be socially undesirable.

Another subscale relationship found that students that were more positive about their behavior but less independent in their classroom judgments scored better in math. This suggested that

following rules may lead to higher math achievement scores.

Considering the students achievement scores and what appears to be a worsening situation, perhaps it is best that these students did not rely on scholastic competence for their self-worth. Although it is not clear how well the standardized achievement scores reflected the teachers' evaluations of student ability (the author is currently exploring this relationship), Harter (1985a) indicated a generally high correlation exists between a teacher's ratings of scholastic competence and achievement test scores.

One possible explanation of the lack of relationship between the instruments used and achievement possibly rests in the nature of the instruments. As self-report instruments, the scores obtained may have been influenced by an effort to respond in a desired manner. The scores also reflect the students' perceptions which reflect their personal interpretation of concepts such as effort and success.

Martinez and Dukes (1987) suggested that the relationship between general satisfaction with self and a more public intellectual domain of self-esteem was based on cultural/racial belief systems. These systems are established by comparison reference groups that set standards for what is to be valued by the specific group. According to this, belief systems allow urban Blacks to maintain a high level of global self-worth while they are performing academically well below national norms. This suggests that the urban students' perceptions of what determines

self-worth may negatively impact their success at academic tasks. Urban teachers and parents need to make special efforts to reinforce the value of academic tasks and proper conduct early and often in their children's lives.

More importantly urban schools need to find ways to facilitate achievement in their students. Although standardized achievement tests may not be the best measure of school learning for urban Blacks, the trend indicated by the two achievement score testings is still disheartening. If we want these students to value education they must be shown that they can succeed at education.

The results of this study supports Mack's (1987) recommendations regarding enhancing self-concept in Black students by using challenging obtainable goals and objectives, encouraging self-directed learning, encouraging self-evaluation, and by becoming knowledgeable about the Black culture.

## Implications for Practitioners

Although the results from this study are far from generalizable to all Black urban elementary students, the following represent some possible practical implications of this study:

1. Black urban elementary students may require extra efforts to promote self-regulation (Ryan, Connell, & Deci, 1985) in

their learning. Teachers need to help students establish their own goals and guide students in ways that encourages self-monitoring of success.

2. Black urban elementary students may need early encouragement and specific examples which highlight the relevance of doing well in school. Teachers should present the "why" of learning along with the "what" and "how."
3. Black urban elementary students may not find the pursuit of challenging work socially desireable. Teachers need to find ways to reward motivated students in a manner which encourages socialization.
4. Black urban elementary students that trust their own judgments but do not perceive themselves as being scholastically competent may have more attendance problems. Since this relationship is likely to play an increasing role in attendance and achievement as the student matures, teachers need to find a way to provide students with choices which the students can succeed at in school.
5. Black urban elementary students may find improving their standard English vocabulary socially undesirable. Teachers and communities need to find ways to encourage and reward the practice of learning English vocabulary in order to facilitate communication in school and outside of a restricted urban area.
6. Black urban elementary students may rely on the performance and value systems of their peers in order to evaluate their

own performance and self-worth. Teachers need to strive for academic standards and educational values that are not dependent upon a small racial/cultural reference group. At the same time, teachers need to be aware of and respect the local belief systems.

7. Black urban elementary students must be shown that they can succeed in school and in life. The rewards of "real" achievement will lead to a more positive more complete self-concept. Nothing succeeds like success.

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Table 1

T-Test of Subscale Means of a Scale of Intrinsic Versus Extrinsic Orientation in the Classroom for study sample and Harter sample (1981b)

| Grade Scale | Study Sample | | | Harter Sample | | | | |
|---|---|---|---|---|---|---|---|---|
| | $\bar{X}$ | SD | N | $\bar{X}$ | SD | N | t | p< |
| Fourth Grade | | | | | | | | |
| Challenge | 2.88 | .77 | 33 | 2.96 | .66 | 96 | .547 | ns |
| Curiosity | 2.78 | .68 | 33 | 2.74 | .77 | 96 | -.265 | ns |
| Mastery | 2.65 | .80 | 33 | 2.90 | .65 | 96 | 1.820 | ns |
| Judgement | 2.40 | .64 | 33 | 2.04 | .52 | 96 | -3.269 | .01 |
| Criteria | 2.14 | .71 | 33 | 2.40 | .73 | 96 | 1.808 | ns |
| Fifth Grade | | | | | | | | |
| Challenge | 2.73 | 1.09 | 14 | 2.87 | .71 | 94 | .655 | ns |
| Curiosity | 2.79 | .69 | 14 | 2.56 | .83 | 94 | -.969 | ns |
| Mastery | 2.68 | .82 | 14 | 2.75 | .65 | 94 | .368 | ns |
| Judgement | 2.21 | .90 | 14 | 2.31 | .64 | 94 | .495 | ns |
| Criteria | 2.11 | .82 | 14 | 2.62 | .70 | 94 | 2.504 | .05 |

Table 2

Factor Structure (Varimax Rotation) for the Scale of Intrinsic Versus Extrinsic Orientation in the Classroom Items

| | Factors | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | $\bar{X}$ | SD |
| 30. Challenge | .81 | | | | | 2.89 | 1.17 |
| 13. Curiosity | .77 | | | | | 3.04 | 1.12 |
| 28. Challenge | .73 | | | | | 2.77 | 1.24 |
| 3. Curiosity | .67 | | | | .33 | 2.94 | 1.26 |
| 22. Challenge | .60 | | | | .43 | 3.02 | 1.11 |
| 6. Challenge | .59 | | | | | 2.98 | 1.03 |
| 15. Mastery | .59 | | -.37 | | | 2.60 | 1.28 |
| 16. Challenge | .58 | | | | | 2.72 | 1.28 |
| 11. Challenge | .57 | | | | .51 | 2.81 | 1.19 |
| 20. Mastery | .56 | | | | .42 | 2.47 | 1.25 |
| 1. Challenge | .55 | | .34 | .44 | | 2.72 | 1.21 |
| 18. Mastery | .52 | | | | | 2.70 | 1.33 |
| 26. Judgement | | .81 | | | | 2.28 | 1.23 |
| 21. Judgement | | .78 | | | | 2.45 | 1.30 |
| 17. Judgement | | .63 | | | | 2.28 | 1.19 |
| 23. Criteria | | .51 | .37 | | | 2.11 | 1.22 |
| 14. Criteria | | | .75 | | | 2.28 | 1.25 |
| 9. Criteria | | | .72 | | | 1.96 | 1.25 |
| 19. Criteria | | | .54 | | .40 | 2.17 | 1.17 |
| 4. Judgement | | | | -.66 | | 2.47 | 1.23 |
| 29. Mastery | | | | .62 | | 2.68 | 1.24 |
| 25. Curiosity | -.38 | | | -.59 | | 1.79 | 1.16 |
| 10. Judgement | | | | -.52 | | 2.17 | 1.22 |
| 24. Mastery | .35 | | | .51 | | 2.53 | 1.21 |
| 8. Mastery | | | | .37 | .68 | 2.70 | 1.33 |
| 2. Mastery | .32 | | | | .66 | 2.96 | 1.20 |
| 27. Criteria | | | | | .65 | 2.30 | 1.35 |
| 7. Curiosity | .49 | -.44 | | | .39 | 2.92 | 1.23 |
| 5. Criteria | -.41 | | .38 | | | 1.96 | 1.23 |
| 12. Judgement | | .34 | .32 | -.30 | | 2.45 | 1.21 |
| Variance explained | 5.75 | 2.67 | 2.42 | 2.65 | 2.82 | | |
| Percent of variance | 19.17 | 8.89 | 8.08 | 8.84 | 9.40 | | |

Note. N=47.
Loadings less than .30 not included for the sake of clarity.

Table 3

Correlation Matrix and Probabilities for the Scale of Intrinsic Versus Extrinsic Orientation in the Classroom Subscales

Pearson Correlation Matrix

| | Challenge | Curiosity | Mastery | Judgment | Criteria |
|---|---|---|---|---|---|
| Challenge | 1.00 | | | | |
| Curiosity | 0.65 | 1.00 | | | |
| Mastery | 0.69 | 0.44 | 1.00 | | |
| Judgment | - 0.16 | 0.00 | -0.16 | 1.00 | |
| Criteria | 0.20 | -0.05 | 0.02 | 0.19 | 1.00 |

Bartlett Chi-Square: 63.02 $p < .001$

Matrix of Bonferroni Probabilities

| | Challenge | Curiosity | Mastery | Judgment | Criteria |
|---|---|---|---|---|---|
| Challenge | 0.00 | | | | |
| Curiosity | 0.00 | 0.00 | | | |
| Mastery | 0.00 | 0.02 | 0.00 | | |
| Judgment | 1.00 | 1.00 | 1.00 | 0.00 | |
| Criteria | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 |

Note. N=47.

Table 4

Factor Analysis (Varimax Rotation) of A Scale of Intrinsic Versus Extrinsic Orientation in the Classroom Subscales

| | Factors | | | | |
|---|---|---|---|---|---|
| Subscale | 1 | 2 | 3 | 4 | 5 |
| Curiosity | .95 | | | | |
| Criteria | | .99 | | | |
| Judgment | | | .99 | | |
| Mastery | | | | .95 | |
| Challenge | .41 | | | .43 | .78 |
| Variance explained | 1.12 | 1.02 | 1.01 | 1.12 | .74 |
| Percent explained | 22.32 | 20.35 | 20.19 | 22.44 | 14.71 |

Note. N=47.

Loadings less than .30 not included for the sake of clarity.

Table 5

T-Tests of Subscale means for the Self-Perception Profile for Children for study sample and Harter sample (1985b)

| Grade / Scale (Gender) | Study Sample | | | Harter Sample | | | | |
|---|---|---|---|---|---|---|---|---|
| | $\bar{X}$ | SD | N | $\bar{X}$ | SD | N | t | p< |
| Fourth Grade | | | | | | | | |
| Scholastic(F) | 2.60 | .77 | 15 | 2.74 | .69 | 25 | .596 | ns |
| | 2.60 | .77 | 15 | 2.95 | .76 | 36 | .578 | ns |
| Scholastic(M) | 2.65 | .61 | 18 | 2.76 | .74 | 32 | .547 | ns |
| | 2.65 | .61 | 18 | 2.61 | .56 | 24 | -.210 | ns |
| Social (F) | 2.60 | .85 | 15 | 2.84 | .92 | 25 | .858 | ns |
| | 2.60 | .85 | 15 | 2.56 | .78 | 36 | -.118 | ns |
| Social (M) | 2.79 | .74 | 18 | 2.97 | .77 | 32 | .778 | ns |
| | 2.79 | .74 | 18 | 2.86 | .78 | 24 | .269 | ns |
| Athletic (F) | 2.60 | .78 | 15 | 2.84 | .69 | 25 | 1.017 | ns |
| | 2.60 | .78 | 15 | 2.63 | .70 | 36 | .135 | ns |
| Athletic (M) | 2.90 | .81 | 18 | 3.13 | .75 | 32 | -1.011 | ns |
| | 2.90 | .81 | 18 | 2.87 | .88 | 24 | -.106 | ns |
| Appearance(F) | 3.29 | .74 | 15 | 2.86 | .78 | 25 | -1.710 | ns |
| | 3.29 | .74 | 15 | 2.95 | .64 | 36 | -1.640 | ns |
| Appearance(M) | 2.83 | .76 | 18 | 3.13 | .79 | 32 | 1.295 | ns |
| | 2.83 | .76 | 18 | 2.75 | .68 | 24 | -.373 | ns |
| Behavior (F) | 2.49 | .58 | 15 | 3.11 | .67 | 25 | 2.980 | .01 |
| | 2.49 | .58 | 15 | 3.06 | .61 | 36 | 3.086 | .01 |
| Behavior (M) | 2.71 | .69 | 18 | 2.75 | .46 | 24 | .209 | ns |
| | 2.71 | .69 | 18 | 2.76 | .63 | 24 | .473 | ns |
| Self-Worth(F) | 3.27 | .70 | 15 | 3.13 | .73 | 25 | -.583 | ns |
| | 3.27 | .70 | 15 | 3.13 | .56 | 36 | -.738 | ns |
| Self-Worth(M) | 3.10 | .46 | 18 | 2.89 | .80 | 32 | 1.020 | ns |
| | 3.10 | .46 | 18 | 2.80 | .68 | 24 | -1.626 | ns |

Table 5 (Continued)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Fifth Grade** | | | | | | | | |
| Scholastic(F) | 3.01 | .69 | 10 | 2.83 | .58 | 29 | -.839 | ns |
| | 3.01 | .69 | 10 | 2.75 | .65 | 22 | -1.059 | ns |
| Scholastic(M) | 2.42 | .22 | 4 | 2.78 | .69 | 27 | 1.031 | ns |
| | 2.42 | .22 | 4 | 2.91 | .63 | 23 | 1.528 | ns |
| Social (F) | 2.80 | .54 | 10 | 2.80 | .77 | 29 | 0 | ns |
| | 2.80 | .54 | 10 | 2.86 | .66 | 22 | .251 | ns |
| Social (M) | 3.21 | .34 | 4 | 2.88 | .71 | 27 | -.899 | ns |
| | 3.21 | .34 | 4 | 3.00 | .47 | 23 | -.841 | ns |
| Athletic (F) | 2.42 | .83 | 10 | 2.62 | .85 | 29 | .655 | ns |
| | 2.42 | .83 | 10 | 2.52 | .72 | 22 | .358 | ns |
| Athletic (M) | 2.75 | .65 | 4 | 3.15 | .72 | 27 | 1.048 | ns |
| | 2.75 | .65 | 4 | 3.05 | .69 | 23 | .809 | ns |
| Appearance(F) | 2.80 | .77 | 10 | 2.62 | .83 | 29 | -.601 | ns |
| | 2.80 | .77 | 10 | 2.70 | .77 | 22 | -.340 | ns |
| Appearance(M) | 3.00 | .64 | 4 | 3.15 | .72 | 27 | .393 | ns |
| | 3.00 | .64 | 4 | 2.99 | .58 | 23 | .003 | ns |
| Behavior (F) | 3.07 | .70 | 10 | 3.32 | .53 | 29 | 1.195 | ns |
| | 3.07 | .70 | 10 | 3.02 | .34 | 22 | -.257 | ns |
| Behavior (M) | 2.54 | .42 | 4 | 2.84 | .56 | 27 | -1.023 | ns |
| | 2.54 | .42 | 4 | 2.82 | .48 | 23 | 1.085 | ns |
| Self-Worth(F) | 2.58 | 1.02 | 10 | 3.04 | .72 | 29 | 1.551 | ns |
| | 2.58 | 1.02 | 10 | 2.66 | .71 | 22 | .248 | ns |
| Self-Worth(M) | 3.29 | .60 | 4 | 3.14 | .69 | 27 | -.417 | ns |
| | 3.29 | .60 | 4 | 3.24 | .44 | 23 | -.208 | ns |

Table 6

Factor Structure (Varimax Rotation) for the Self-Perception Profile for Children Items

| | | Factors | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | $\bar{X}$ | SD |
| 6. | G | .76 | | | | | | 3.09 | 1.06 |
| 24. | G | .66 | | | | | | 3.26 | 1.13 |
| 18. | G | .66 | | | | | | 3.43 | 0.90 |
| 30. | G | .60 | | .34 | | | | 3.19 | 1.14 |
| 27. | A | .53 | | | | | | 3.11 | 1.18 |
| 19. | S | | .72 | | | | | 2.81 | 1.10 |
| 17. | B | | .70 | | | | .33 | 2.81 | 0.97 |
| 11. | B | | .58 | | .37 | | | 2.75 | 1.05 |
| 25. | S | | .55 | | | .45 | | 2.98 | 0.99 |
| 28. | P | | | .80 | | | | 2.98 | 1.21 |
| 22. | P | | | .72 | | | | 2.92 | 1.23 |
| 36. | G | | | .69 | | .31 | | 2.87 | 1.15 |
| 9. | A | | | | .79 | | | 2.49 | 1.27 |
| 12. | G | | | | .69 | | | 2.53 | 1.32 |
| 26. | C | | | .32 | .62 | | .36 | 2.72 | 1.25 |
| 32. | C | | | | .59 | .33 | | 2.94 | 1.13 |
| 34. | P | .44 | | .42 | .51 | | | 2.96 | 1.20 |
| 29. | B | | | | | .74 | | 2.51 | 1.16 |
| 31. | S | | | | .35 | .64 | | 2.45 | 1.21 |
| 23. | B | | | | | .62 | | 2.68 | 1.16 |
| 13. | S | | | | | | .77 | 2.43 | 1.08 |
| 1. | S | | | | | | .65 | 2.70 | 1.10 |
| 5. | B | .32 | .39 | | | | -.43 | 2.53 | 1.10 |
| 10. | P | .38 | | | .41 | | .42 | 2.94 | 1.17 |
| 8. | C | .44 | | | .49 | | -.33 | 3.09 | 1.14 |
| 33. | A | | .44 | | .41 | .30 | | 2.49 | 1.12 |
| 2. | C | .31 | .30 | | | .45 | | 2.72 | 1.23 |
| 7. | S | .45 | .38 | | | | | 2.78 | 1.16 |
| 4. | P | .46 | | | .41 | | | 3.43 | 0.95 |
| 3. | A | .40 | | | .48 | .44 | | 2.85 | 1.18 |
| 21. | A | .33 | | | | .41 | | 2.68 | 1.11 |
| 15. | A | .36 | | | .34 | .36 | | 2.51 | 1.16 |
| 16. | P | .39 | | | | | | 2.70 | 1.38 |
| 20. | C | .37 | | -.46 | | | | 2.62 | 1.24 |
| 14. | C | | .32 | | .49 | | | 2.51 | 1.37 |
| VE | | 4.28 | 3.39 | 2.67 | 4.20 | 3.13 | 2.11 | | |
| %E | | 11.89 | 9.41 | 7.43 | 11.66 | 8.68 | 5.87 | | |

Notes. S=Scholastic Competence, C=Social Competence, A=Athletic Competence, P=Physical Appearance, B=Behavioral Conduct, G=Global Self-Worth. VE=Variance explained, %E=Percent of variance. Loadings less than .30 not included for the sake of clarity.

Table 7

Correlation Matrix and Probabilities for the Self-Perception Profile Subscales

Pearson Correlation Matrix

| | Scholastic | Social | Athletic | Physical | Behavior | Global |
|---|---|---|---|---|---|---|
| Scholastic | 1.00 | | | | | |
| Social | 0.37 | 1.00 | | | | |
| Athletic | 0.38 | 0.59 | 1.00 | | | |
| Physical | 0.06 | 0.45 | 0.45 | 1.00 | | |
| Behavioral | 0.60 | 0.35 | 0.37 | 0.09 | 1.00 | |
| Global | 0.30 | 0.49 | 0.65 | 0.61 | 0.21 | 1.00 |

Bartlett Chi-Square: 97.79 $p < .001$

Matrix of Bonferroni Adjusted Probabilities

| | Scholastic | Social | Athletic | Physical | Behavior | Global |
|---|---|---|---|---|---|---|
| Scholastic | 0.00 | | | | | |
| Social | 0.17 | 0.00 | | | | |
| Athletic | 0.13 | 0.00 | 0.00 | | | |
| Physical | 1.00 | 0.02 | 0.02 | 0.00 | | |
| Behavioral | 0.00 | 0.27 | 0.00 | 0.00 | 1.00 | |
| Global | 0.62 | 0.01 | 0.00 | 0.00 | 1.00 | 0.00 |

Table 8

Multiple Regression for the Self-Perception Profile for Children Domain Subscales Predicting Global Self-Worth

| Predictor | b (Criterion) | Std Error | Std b | Tolerance | t | p |
|---|---|---|---|---|---|---|
| Constant | 0.77 | 0.33 | 0.00 | . | 2.35 | 0.02 |
| Athletic | 0.43 | 0.10 | 0.47 | 0.7956 | 4.14 | 0.00 |
| Physical | 0.38 | 0.11 | 0.40 | 0.7956 | 3.47 | 0.00 |
| | (Global S-W) | N=47 | | $R^2$=.55 | ANOVA F=26.49 | 0.00 |

Table 9

Factor analysis (Varimax Rotation) of the Self-Perception Profile for Children Subscales

| | Factors | | | | |
|---|---|---|---|---|---|
| Subscale | 1 | 2 | 3 | 4 | 5 |
| Athletic | .86 | | .34 | | |
| Global | .71 | | | .56 | |
| Behavioral | | .93 | | | .30 |
| Social | | | .90 | | |
| Physical | | | | .93 | |
| Scholastic | | .33 | | | .91 |
| Variance explained | 1.41 | 1.04 | 1.01 | 1.25 | 1.02 |
| Percent explained | 23.49 | 17.35 | 16.89 | 20.88 | 16.92 |

Note. N=47

Loadings less than .30 not included for the sake of clarity.

Table 10

Correlations Matrix and Probabilities among Subscales of the Scale of Intrinsic Versus Extrinsic Orientation in the Classroom and the Self-Perception Profile for Children

Pearson Correlation Matrix

| | Challenge | Curiosity | Mastery | Judgment | Criteria |
|---|---|---|---|---|---|
| Scholastic | 0.52 | 0.46 | 0.33 | -0.08 | -0.02 |
| Social | -0.03 | 0.26 | -0.06 | -0.10 | -0.27 |
| Athletic | 0.10 | 0.32 | 0.03 | 0.16 | -0.15 |
| Physical | 0.00 | 0.33 | 0.03 | 0.03 | -0.28 |
| Behavioral | 0.46 | 0.49 | 0.39 | -0.25 | 0.10 |
| Global | 0.15 | 0.39 | -0.02 | 0.13 | -0.23 |

Matrix of Bonferroni Probabilities

| | Challenge | Curiosity | Mastery | Judgment | Criteria |
|---|---|---|---|---|---|
| Scholastic | 0.01 | 0.06 | 1.00 | 1.00 | 1.00 |
| Social | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Athletic | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Physical | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Behavioral | 0.06 | 0.03 | 0.34 | 1.00 | 1.00 |
| Global | 1.00 | 0.34 | 1.00 | 1.00 | 1.00 |

Note. N=47

Table 11

Multiple Regressions with Self-Perception Subscales Predicting Intrinsic Motivation Subscales

| Predictor | b | Std Error | Std b | Tolerance | t | P |
|---|---|---|---|---|---|---|
| | (Criterion) | | | | | |
| Constant | 1.20 | 0.54 | 0.00 | . | 2.23 | 0.03 |
| Scholast | 0.58 | 0.20 | 0.45 | 0.6135 | 2.90 | 0.01 |
| Social | -.36 | 0.16 | -.30 | 0.8417 | -2.27 | 0.03 |
| Behavior | 0.40 | 0.20 | 0.30 | 0.6240 | 1.97 | 0.06 |
| | (Challenge) | N=47 | $R^2$=.38 | ANOVA | F=8.71 | 0.00 |
| Constant | 0.76 | 0.45 | 0.00 | . | 1.67 | 0.10 |
| Behavior | 0.43 | 0.13 | 0.42 | 0.9553 | 3.35 | 0.00 |
| Global | 0.28 | 0.12 | 0.30 | 0.9553 | 2.40 | 0.02 |
| | (Curiosity) | N=47 | $R^2$=.33 | ANOVA | F=10.66 | 0.00 |
| Constant | 1.37 | 0.46 | 0.00 | . | 2.96 | 0.01 |
| Behavior | 0.48 | 0.17 | 0.39 | 1.0000 | 2.87 | 0.01 |
| | (Master) | N=47 | $R^2$=.15 | ANOVA | F=8.23 | 0.01 |
| Constant | 2.69 | 0.48 | 0.00 | . | 5.64 | 0.00 |
| Behavior | -.38 | 0.17 | -.35 | 0.8664 | -2.30 | 0.03 |
| Athletic | 0.26 | 0.14 | 0.28 | 0.8664 | 1.86 | 0.07 |
| | (Judgment) | N=47 | $R^2$=.13 | ANOVA | F=3.25 | 0.05 |
| Constant | 2.95 | 0.43 | 0.00 | . | 6.92 | 0.00 |
| Physical | -.27 | 0.14 | -.28 | 1.0000 | -1.98 | 0.05 |
| | (Criteria) | N=47 | $R^2$=.08 | ANOVA | F=3.93 | 0.05 |

Table 12

Factor Analysis (Varimax Rotation) of Scale of Intrinsic Versus Extrinsic Motivation and Self-Perception Profile Subscales

| | Factors | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Challenge | .79 | | | | | .46 |
| Curiosity | .81 | .36 | | | | |
| Mastery | .36 | | | | | .91 |
| Judgment | | | .96 | | | |
| Criteria | | | | | .96 | |
| Scholasti | .65 | | | .63 | | |
| Behavior | .42 | | | .65 | | |
| Physical | | .91 | | | | |
| Social | | .41 | | .74 | | |
| Athletic | | .49 | | .71 | | |
| Global | | .72 | | | | |
| VE | 2.10 | 1.95 | 1.14 | 2.00 | 1.09 | 1.19 |
| %E | 19.12 | 17.71 | 10.38 | 18.18 | 9.86 | 10.82 |

Note. N=47. VE=variance explained, %E=percent of variance explained.

Table 13

Repeated Measures Analysis of Second Grade and Fourth/Fifth Grade Attendance and Achievement (Iowa Tests of Basic Skills)

| Source | SS | df | MS | F | p |
|---|---|---|---|---|---|
| Attendance | 184.84 | 1 | 184.84 | 8.05 | 0.01 |
| Error | 895.72 | 39 | 22.97 | | |
| Vocabulary | 4945.51 | 1 | 4945.51 | 28.05 | 0.00 |
| Error | 6876.99 | 39 | 176.33 | | |
| Reading | 3175.20 | 1 | 3175.20 | 26.72 | 0.00 |
| Error | 4633.80 | 39 | 118.82 | | |
| Math | 8578.51 | 1 | 8578.51 | 45.30 | 0.00 |
| Error | 7196.49 | 38 | 189.38 | | |

Table 14

Correlation Matrix and Probabilities for Iowa Tests of Basic Skills Percentile Scores for Second and Fourth/Fifth Grade, Intrinsic Versus Extrinsic Motivation Subscales, and Self-Perception Subscales

Pearson correlation matrix

| | Vocab-2 | Read-2 | Math-2 | Vocab-4/5 | Read-4/5 | Math-4/5 |
|---|---|---|---|---|---|---|
| Vocab-2 | 1.00 | 0.72 | 0.47 | 0.51 | 0.44 | 0.38 |
| Read-2 | 0.72 | 1.00 | 0.37 | 0.53 | 0.63 | 0.47 |
| Math-2 | 0.47 | 0.37 | 1.00 | 0.34 | 0.32 | 0.58 |
| Vocab-4/5 | 0.51 | 0.53 | 0.34 | 1.00 | 0.56 | 0.58 |
| Read-4/5 | 0.44 | 0.63 | 0.32 | 0.56 | 1.00 | 0.51 |
| Math-4/5 | 0.38 | 0.47 | 0.58 | 0.58 | 0.51 | 1.00 |
| Challenge | 0.21 | 0.24 | 0.12 | 0.25 | 0.12 | 0.11 |
| Curiosity | 0.19 | 0.36 | 0.38 | 0.25 | 0.38 | 0.26 |
| Mastery | 0.07 | 0.23 | 0.02 | 0.31 | 0.05 | 0.17 |
| Judgment | -.01 | -.12 | 0.43 | -.05 | -.09 | 0.03 |
| Criteria | 0.27 | -.00 | 0.17 | 0.10 | 0.01 | 0.21 |
| Scholastic | 0.17 | 0.20 | 0.21 | 0.29 | 0.28 | 0.28 |
| Social | -.04 | 0.18 | 0.11 | -.09 | 0.30 | 0.09 |
| Athletic | 0.16 | 0.16 | 0.37 | 0.21 | 0.05 | 0.24 |
| Physical | -.27 | -.08 | -.01 | -.01 | -.11 | 0.05 |
| Behavior | 0.34 | 0.41 | 0.15 | 0.44 | 0.46 | 0.42 |
| Global S-W | 0.05 | 0.18 | 0.22 | 0.13 | -.01 | 0.20 |

Matrix of Bonferroni adjusted probabilities

| | Vocab-2 | Read-2 | Math-2 | Vocab-4/5 | Read-4/5 | Math-4/5 |
|---|---|---|---|---|---|---|
| Vocab-2 | 0.00 | 0.00 | 0.19 | 0.07 | 0.33 | 1.00 |
| Read-2 | 0.00 | 0.00 | 1.00 | 0.03 | 0.00 | 0.19 |
| Math-2 | 0.19 | 1.00 | 0.00 | 1.00 | 1.00 | 0.01 |
| Vocab-4/5 | 0.07 | 0.03 | 1.00 | 0.00 | 0.02 | 0.01 |
| Read-4/5 | 0.33 | 0.00 | 1.00 | 0.01 | 0.00 | 0.06 |
| Math-4/5 | 1.00 | 0.19 | 0.01 | 0.01 | 0.06 | 0.00 |

Note. None of the subscales are significantly correlated with achievement

Table 15

Multiple Regression with Selected Subscales Predicting Fourth/Fifth Grade Attendance

| Predictor | b (Criterion) | Std Error | Std b | Tolerance | t | P |
|---|---|---|---|---|---|---|
| Constant | 91.53 | 4.77 | 0.00 | . | 19.20 | 0.00 |
| Judgment | -2.84 | 1.21 | -.32 | 0.9934 | -2.36 | 0.02 |
| Scholastic | 3.08 | 1.31 | 0.32 | 0.9934 | 2.36 | 0.02 |
| | (Attendance) | N=47 | | $R^2$=.22 | ANOVA F=6.05 | 0.01 |

Table 16

Multiple Regression with Selected Subscales Predicting Fourth/Fifth Grade Attendance

| Predictor | b (Criterion) | Std Error | Std b | Tolerance | t | P |
|---|---|---|---|---|---|---|
| Constant | -5.48 | 12.55 | 0.00 | . | -.44 | 0.67 |
| Challenge | -2.06 | 4.15 | -.12 | 0.3565 | -.50 | 0.62 |
| Curiosity | 2.29 | 4.08 | 0.11 | 0.5039 | 0.56 | 0.58 |
| Mastery | 5.45 | 3.32 | 0.30 | 0.5801 | 1.64 | 0.11 |
| Judgment | -0.35 | 3.07 | -.02 | 0.8517 | -.11 | 0.91 |
| Criteria | 0.19 | 3.24 | 0.01 | 0.7326 | 0.06 | 0.95 |
| Vocab-2 | 0.33 | 0.10 | 0.49 | 0.8498 | 3.24 | 0.00 |
| | (Vocab-4/5) | N=40 | $R^2$=.35 | ANOVA | F=2.94 | 0.02 |
| Constant | -1.30 | 13.87 | 0.00 | . | -.09 | 0.93 |
| Challenge | -5.04 | 4.58 | -.23 | 0.3558 | -1.10 | 0.28 |
| Curiosity | 9.50 | 4.68 | 0.38 | 0.4641 | 2.03 | 0.05 |
| Mastery | -2.15 | 3.67 | -.10 | 0.5781 | -.59 | 0.56 |
| Judgment | -1.96 | 3.40 | -.08 | 0.8435 | -.58 | 0.57 |
| Criteria | 2.03 | 3.44 | 0.08 | 0.7905 | 0.59 | 0.56 |
| Reading-2 | 0.54 | 0.13 | 0.56 | 0.8210 | 4.04 | 0.00 |
| | (Reading-4/5) | N=40 | $R^2$=.48 | ANOVA | F=5.02 | 0.00 |
| Constant | 8.69 | 13.25 | 0.00 | . | 0.66 | 0.52 |
| Challenge | -4.94 | 4.28 | -.25 | 0.3601 | -1.16 | 0.26 |
| Curiosity | 1.76 | 4.65 | 0.08 | 0.4204 | 0.38 | 0.71 |
| Mastery | 5.02 | 3.40 | 0.25 | 0.5802 | 1.48 | 0.15 |
| Judgment | -7.60 | 3.43 | -.34 | 0.7131 | -2.22 | 0.03 |
| Criteria | 5.45 | 3.24 | 0.24 | 0.7848 | 1.68 | 0.10 |
| Math-2 | 0.47 | 0.11 | 0.69 | 0.6305 | 4.18 | 0.00 |
| | (Math-4/5) | N=39 | $R^2$=.47 | ANOVA | F=4.71 | 0.00 |

Table 16 (continued)

| Predictor | b (Criterion) | Std Error | Std b | Tolerance | t | P |
|---|---|---|---|---|---|---|
| Constant | -7.85 | 11.34 | 0.00 | . | -.69 | 0.49 |
| Scholastic | 1.66 | 4.23 | 0.08 | 0.4157 | 0.39 | 0.70 |
| Social | -8.68 | 3.83 | -.43 | 0.4794 | -2.27 | 0.03 |
| Athletic | 2.75 | 3.64 | 0.15 | 0.4341 | 0.76 | 0.46 |
| Physical | 2.42 | 3.47 | 0.13 | 0.4798 | 0.70 | 0.49 |
| Behavior | 6.97 | 4.15 | 0.33 | 0.4465 | 1.68 | 0.10 |
| Global | 1.92 | 4.55 | 0.10 | 0.3385 | 0.42 | 0.68 |
| Vocab-2 | 0.24 | 0.11 | 0.37 | 0.6987 | 2.32 | 0.03 |
| | (Vocab-4/5) | N=40 | | $R^2$=.44 | ANOVA F=3.61 | 0.01 |
| Constant | -3.23 | 12.96 | 0.00 | . | -.25 | 0.81 |
| Scholastic | 4.74 | 4.99 | 0.19 | 0.4102 | 0.95 | 0.35 |
| Social | -3.03 | 4.37 | -.12 | 0.5039 | -.69 | 0.49 |
| Athletic | -1.53 | 4.17 | -.07 | 0.4519 | -.37 | 0.72 |
| Physical | 1.59 | 3.87 | 0.07 | 0.5283 | 0.41 | 0.68 |
| Behavior | 4.91 | 4.95 | 0.19 | 0.4304 | 0.99 | 0.33 |
| Global | -3.71 | 5.33 | -.15 | 0.3380 | -.70 | 0.49 |
| Reading-2 | 0.56 | 0.14 | 0.58 | 0.7524 | 4.00 | 0.00 |
| | (Reading-4/5) | N=40 | | $R^2$=.50 | ANOVA F=4.48 | 0.00 |
| Constant | -11.54 | 12.75 | 0.00 | . | -.91 | 0.37 |
| Scholastic | -2.20 | 4.59 | -.10 | 0.4303 | -.48 | 0.64 |
| Social | -2.80 | 4.18 | -.13 | 0.4891 | -.67 | 0.51 |
| Athletic | -2.73 | 4.24 | -.13 | 0.4034 | -.64 | 0.53 |
| Physical | 0.62 | 3.71 | 0.03 | 0.5301 | 0.17 | 0.87 |
| Behavior | 10.70 | 4.22 | 0.45 | 0.5272 | 2.53 | 0.02 |
| Global | 4.12 | 4.97 | 0.18 | 0.3422 | 0.83 | 0.41 |
| Math-2 | 0.38 | 0.10 | 0.55 | 0.8104 | 3.82 | 0.00 |
| | (Math-4/5) | N=39 | | $R^2$=.48 | ANOVA F=4.02 | 0.00 |

Figure 1. Dendrogram of hierarchical cluster analysis of a Scale of Intrinsic Versus Extrinsic Orientation in the Classroom subscales.

DISTANCE METRIC IS EUCLIDEAN DISTANCE
WARD MINIMUM VARIANCE METHOD

TREE DIAGRAM

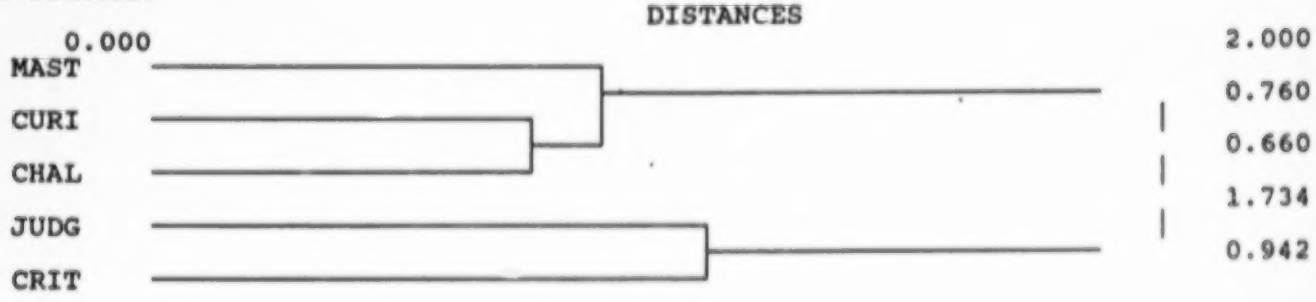


Figure 2. Dendrogram of hierarchical cluster analysis of the Self-Perception Profile for Children subscales.

DISTANCE METRIC IS EUCLIDEAN DISTANCE
WARD MINIMUM VARIANCE METHOD

TREE DIAGRAM

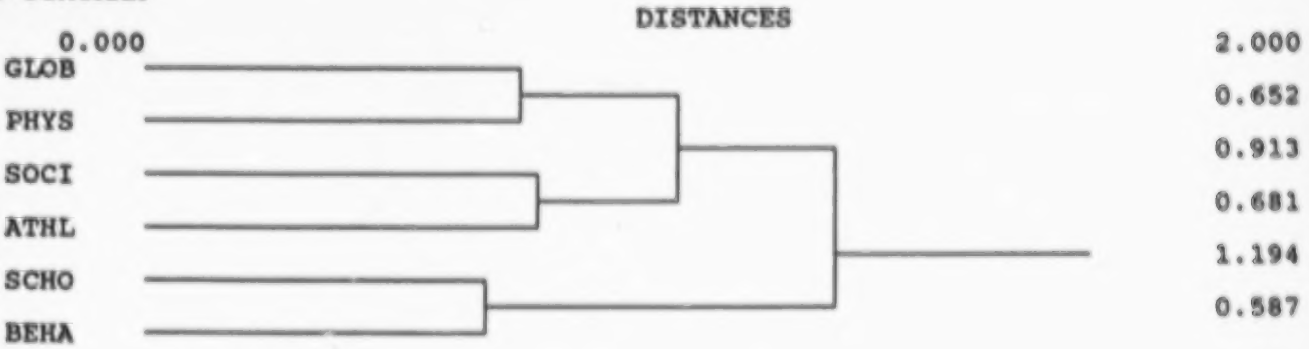
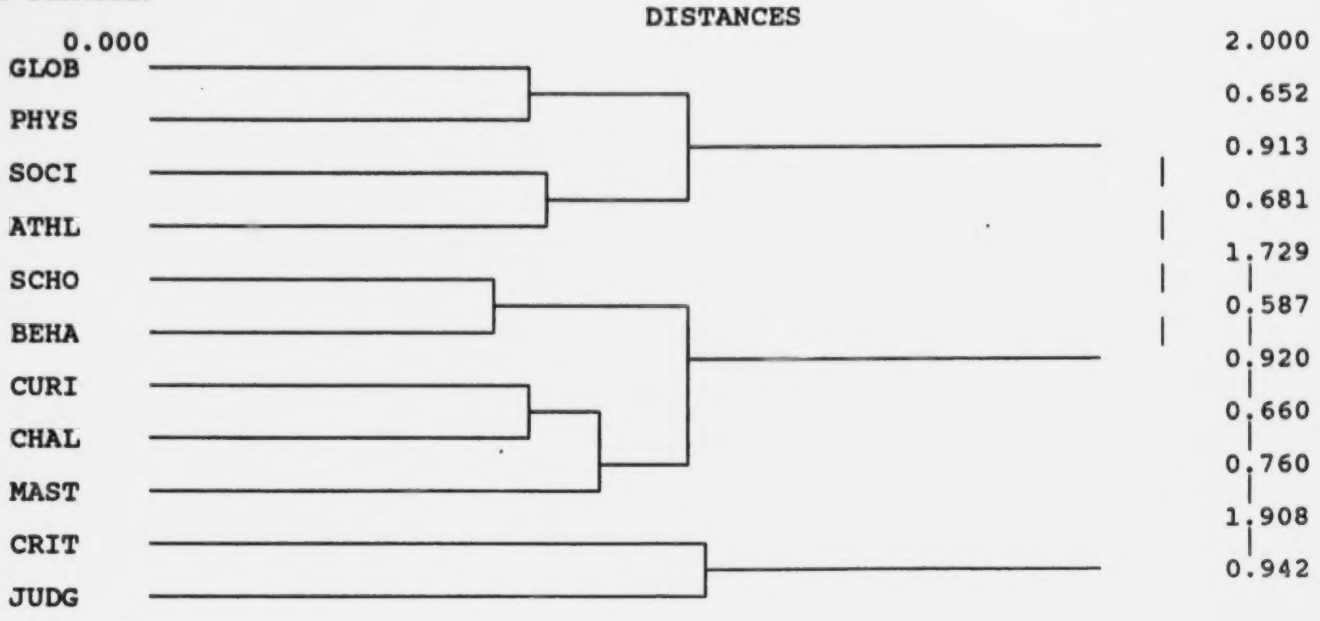


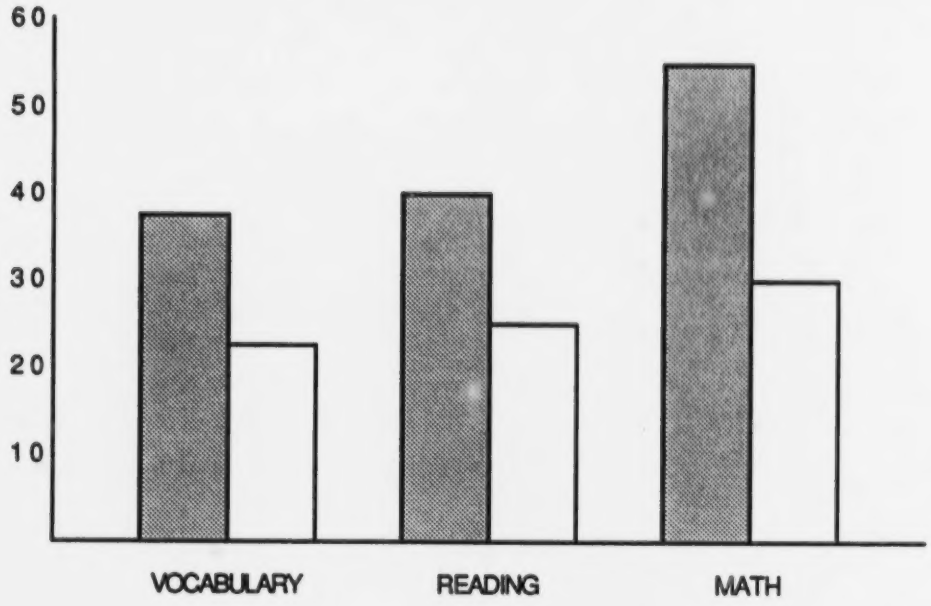
Figure 3. Dendrogram of hierarchical cluster analysis of all of the subscales from a Scale of Intrinsic Versus Extrinsic Orientation in the Classroom and the Self-Perception Profile for Children.

Figure 4. Iowa Tests of Basic Skills achievement percentile scores for vocabulary, reading, and math for second grade and fourth/fifth grade (second grade shaded).

DISTANCE METRIC IS EUCLIDEAN DISTANCE
WARD MINIMUM VARIANCE METHOD

TREE DIAGRAM




60
50
40
30
20
10
VOCABULARY
READING
MATH